

C L A I M S

1. A communications protocol for a
5 communications bus wherein messages are transmitted to a
plurality of devices communicating by means of a bus wherein
each message includes a unique code indicating the end of the
message and wherein that same unique code triggers a transfer
10 of communications control to another device of the plurality of
devices.

2. The protocol of claim 1 wherein the
transmitted messages are in first, second, and third formats,
15 each of the first, second, and third formats having a
distinguishable length.

3. The protocol of claim 2 wherein the first
20 message format comprises only the unique code, and indicates to
the plurality of devices that communications control should be
transferred to the next of the plurality of devices in a
predetermined sequence.

4. The protocol of claim 3 wherein the second message format comprises a sequence identifier and the unique code, and indicates to the plurality of devices that communications control should be transferred to a device of the plurality of devices which is identified by the sequence identifier.

5. The protocol of claim 4 wherein the third message format comprises a sequence identifier, data, and the unique code.

6. The protocol of claim 5 wherein the unique code is a single byte, eight bits, a SYNC byte, or two or more preselected bytes.

7. The protocol of claim 6 wherein the two or more preselected bytes are used in combination to form the unique code.

8. The protocol of claim 6 wherein any one of the two or more preselected bytes comprises the unique code.

9. The protocol of claim 6 wherein the bus is a flat ribbon cable.

5 10. The protocol of claim 1 wherein communications control between the plurality of device is a hybrid of peer-to-peer and master/slave protocols.

10 11. A device communications comprising:
a plurality of communicating devices;
a communications media communicably
connecting the plurality of devices;
a sequential identifier for each of the
15 plurality of devices, the identifier providing a unique
identity for each device and providing a sequence order for all
of the plurality of devices;
a unique code; and
a protocol wherein each device transmits the
20 unique code on the communications media in the sequence order
if the device has nothing to report, transmits the sequence
identifier of another device followed by data followed by the
unique code if the device has information to report, and
transmits the sequential identifier of another device followed
25 by the unique code if the transmitting device desires to change
out of sequence to a different device in the sequence order.

005121" 4888460

12. The device communications of claim 11 wherein the unique code is a single byte, eight bits, or a sync byte.

5 13. The device communications of claim 11 wherein every device receiving a message determines if the unique code is the entire message.

10 14. The device communications of claim 13 wherein if the entire message is the unique code, the device increments a sequence counter to identify the next device in the sequence order.

15 15. The device communications of claim 14 wherein the type of message is at least partially identified by the length of the message.

20 16. A method of communications for a communications bus communicably connecting a plurality of communications devices, the method comprising the steps of:
25 assigning an identifier and a sequence order to each of the multiplicity of devices;
transmitting, continuously and in sequence order, a message on the bus from each of the multiplicity of devices;

terminating each message with a unique code;
wherein the message comprises the unique code
alone if the device has no other message to transmit;

wherein the message comprises the identifier
5 for another device and the unique code if the transmitting
device desires to move elsewhere in the sequence order; and
wherein the message comprises the identifier
for another device, data and the unique code if the
transmitting device has a report to make.

10

17. The method of claim 16 wherein the unique
code is a single byte, eight bits, a sync bit, or two or more
preselected bytes.

15

18. The method of claim 17 wherein the two or
more preselected bytes are used separately.

20

19. A method of communicating between a plurality
of devices communicably connected by a communications medium,
the method comprising the steps of:

sequencing the plurality of devices into a
25 sequence order;

transmitting a message on the communications
medium from one of the plurality of devices having
communications control over the communications medium;

receiving the message from the communications
30 medium at each of the plurality of devices;

005721-4882/50

determining, at each of the plurality of devices, if the message is: a unique code, or a combination of a sequence identifier and a unique code;

5 incrementing communications control to the next device of the plurality of devices in the sequence order if the message is the unique code; and

 transferring communications control to a device identified in the sequence identifier if the message is a combination of the sequence identifier and the unique code.

10

20. The method of claim 19 wherein the determining step further determines if the message is a combination of data and the unique code and the incrementing
15 step also increments or transfers communications control if the message is the combination of data and the unique code.

COPYRIGHT "1988" 250